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REVIEW ARTICLE

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Clinical practice guideline on prevention of rhabdomyolysis induced acute kidney injury: Endorsement by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine

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The Scandinavian Society of Anaesthesiology and Intensive Care Medicine Clinical Practice Committee endorses the recent *DASAIM/DSIT guideline for prevention of rhabdomyolysis-induced acute kidney injury*. However, we emphasize the low quality of evidence with only weak recommendations for all interventions, highlighting that further research is very likely to have an important impact on the confidence in the estimate of effect and is likely to change the estimates.

1 | BACKGROUND

Rhabdomyolysis is not uncommon in the critically ill and is a consequence of a variety of insults including crush injuries, toxins, drugs and hypoxia.[1] Acute kidney injury (AKI) is a severe complication of rhabdomyolysis and is most often treated with fluid resuscitation, along with several supportive strategies including diuretics, urinary alkalinization, antioxidants and renal replacement therapy.[1-4] Best practice recommendations have been difficult to formulate due to incomplete understanding of the pathogenesis behind rhabdomyolysis induced AKI, lack of consensus definitions and lack of human studies. In 2019, the Danish Society of Intensive Care Medicine (DSIT) and the Danish Society of Anesthesiology and Intensive Care Medicine (DASAIM) summarized the available evidence and provided recommendations for the prevention of rhabdomyolysis-induced AKI.[5]

2 | METHODS

It was decided by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine (SSAI) Clinical practice committee (CPC) to assess the *DASAIM/DSIT guideline on the prevention of rhabdomyolysis induced AKI* for possible endorsement. The Appraisal of Guidelines for REsearch and Evaluation (AGREE) II tool,[6] was used. Details on the endorsement process is available elsewhere.[7]

3 | RESULTS

3.1 | Quality appraisal (AGREE II)

Five out of six SSAI CPC members completed the appraisal. One member co-authored the guideline and was excluded from the evaluation, as per the SSAI endorsement process.[6]

The individual domain totals were: Scope and Purpose 91%; Stakeholder Involvement 63%; Rigor of Development 79%; Clarity of Presentation 88%; Applicability 55%; Editorial Independence 83%; Overall Assessment 77%.

The breakdown of the individual appraisers (de-identified) is available in the supplementary material.

4 | DISCUSSION

There was acceptable agreement between the SSAI CPC appraisers in most domains. However, there were notable limitations related to the applicability of the guidelines due to lack of high-quality evidence, including data from randomized clinical trials in the target population. Much of the data underpinning the recommendations were extrapolated from other populations than those suffering from rhabdomyolysis induced AKI. Finally, there was a lack of input from important stakeholders such as nurses, dialysis technicians, patients, caregivers and regulatory bodies.

5 | CONCLUSION

The SSAI CPC endorses the DASAIM/DSIT Clinical Practice Guideline on Prevention of rhabdomyolysis-induced AKI, acknowledging the poor quality of evidence underpinning its recommendations.

CONFLICTS OF INTEREST

No Clinical Practice Committee member had direct conflicts of interest. MHM was a co-author of the guideline assessed and did not participate in the AGREE II assessment, as per the SSAI endorsement process. No other authors had indirect conflicts of interest.

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REFERENCES

1. Huerta-Aladin AL, Varon J, Marik PE. Bench to bedside review: rhabdomyolysis – an overview for clinicians. *Crit Care*. 2005;9:158-169.
2. McMahon GM, Zeng X, Waikar SS. A risk prediction score for kidney failure or mortality in rhabdomyolysis. *JAMA Intern Med*. 2013;173(19):1821-1828.
3. Chatzizisis YS, Misirli G, Hatzitolios AI, Giannoglou GD. The syndrome of rhabdomyolysis: complications and treatment. *Eur J Intern Med*. 2008;19(8):568-574.
4. Scharman EJ, Troutman WG. Prevention of kidney injury following rhabdomyolysis: a systematic review. *Ann Pharmacother*. 2013;47(1):90-105.
5. Michelsen J, Cordtz J, Liboriussen L, et al. Prevention of rhabdomyolysis-induced acute kidney injury – a DASAIM/DSIT clinical practice guideline. *Acta Anaesthesiol Scand*. 2019;00:1-11.
6. Brouwers MC, Kho ME, Browman GP, et al. AGREE II: advancing guideline development, reporting and evaluation in health care. *CMAJ*. 2010;182:E839-E842.
7. Rehn M, Chew MS, Olkkola KT, Örn Sverrison K, Yli-Hankala A, Møller MH. Endorsement of clinical practice guidelines by the Scandinavian Society of Anaesthesiology and Intensive Care Medicine. *Acta Anaesthesiol Scand*. 2019;63:161-163.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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